

Please add new claims 53 and 54 as follows:

--53. (New) The method according to claim 39, wherein the change of the viscosity is determined and evaluated in the determining and evaluating step in accordance with engine data available in an engine controller.

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54. (New) The method according to claim 45, wherein the viscosity of the motor oil is indirectly determined in the viscosity determining step in accordance with engine data available in an engine controller.--.

REMARKS

I. Introduction

With the addition of new claims 53 and 54, claims 33, 36 and 39 to 54 are pending in the present application. In view of the foregoing amendments and the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

II. Information Disclosure Statement

Applicants once again note that the Office Action mailed on July 24, 2001 stated that "no explanation of relevance" was provided with respect to German Published Patent Application Nos. 32 38 195 A1 and 41 31 969 C2, cited by Applicants in the Information Disclosure Statement and listed on the PTO-1449 paper filed on September 26, 2001. Pursuant to 37 C.F.R. § 1.98(a)(3), any information disclosure statement shall include a concise explanation of relevance of each patent, publication, or other information listed that is not in the English language. The concise explanation "may be either separate from the specification or incorporated therein." 37 C.F.R. § 1.98(a)(3) (emphasis added). With respect to German Published Patent Application No. 32 28 195 A1, the Examiner will note that the Specification provides a concise explanation of relevance at page 2, lines 15 to 19. With respect to German Published Patent Application No. 41 31 969 C2, the Examiner will note that the Specification provides a concise explanation of relevance at page 2, lines 7 to 13. It is therefore respectfully submitted that the Information Disclosure Statement and PTO-1449 paper fully satisfies the requirements of 37 C.F.R. § 1.98 with respect to German Published Patent Application Nos. 32 38 195 A1 and 41 31 969 C2. Applicants again respectfully request

consideration of these publications by the Examiner and again respectfully request that the Examiner provide an initialed copy of the PTO-1449 paper with the next Office communication indicating consideration of these publications.

III. Drawings

Applicants thank the Examiner for indicating that all objections to the drawings have been overcome and that the proposed drawing correction of June 19, 2002 has been approved.

Applicants note however, that the Office Action states that “[a] proper drawing correction or corrected drawings are required in reply to the Office action [sic] to avoid abandonment of the application.” Office Action at p. 2. It is believed that this statement is in error in view of the indication that all drawing objections have been overcome and that the drawing correction has been approved. Withdrawal of the requirement for drawing corrections or corrected drawings is therefore respectfully requested.

IV. Rejection of Claims 33, 36, 39 and 40 Under 35 U.S.C. § 103(a)

Claims 33, 36, 39 and 40 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 4,888,976 (“Vermeiren”). Applicants respectfully submit that Vermeiren does not render obvious the present claims as amended herein for the following reasons.

Amended claim 39 relates to a method of indirectly determining motor oil quality. Amended claim 39 recites that the method includes the steps of determining a viscosity of the motor oil during operation of an internal combustion engine and indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of a temperature and frictional torque of the engine. Support for the amendments made to claim 39 may be found throughout the Specification.

Vermeiren purports to relate to a device for measuring the effective viscosity of a lubricant. The Office Action contends that Vermeiren describes the steps of “determining a viscosity of the motor oil during operation of an internal combustion engine” and “determining and evaluating a change of the viscosity as an inherent function of a temperature and as a function of the power required to obtain a given motor speed.” Office Action at pages 3 to 4. In support of this rejection, the

Office Action merely cites col. 1, lines 18 to 21, which state that “[t]he viscosity is determined by measuring the power that must be supplied to the motor to obtain a given motor speed.” In the cited portion, Vermeiren fails to disclose, or even suggest, the step of “indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of a temperature and frictional torque of the engine,” as recited in amended claim 39.

The Office Action admits that “Vermeiren fails to teach the determining of a change in oil viscosity as a function of frictional torque of the engine.” Office Action at page 4. However, the Office Action contends that “it would have been obvious to one having ordinary skill in the art armed with said teaching to determine a change in oil viscosity as a function of frictional torque of the engine.” Office Action at page 4. In this regard, the Office Action contends that “Vermeiren discloses in col. 1, lines 11-13 that oil viscosity is determined from a measured motor parameter,” that “Applicant [sic] has claimed that the oil viscosity is determined from a measured motor parameter in that frictional torque is a measured motor parameter,” “the Applicant [sic] has defined the frictional torque as being the difference between the starter power and the acceleration power” and that “Vermeiren teaches (col. 1, lines 18-20) that the measured motor parameter is the power required to obtain a given motor speed which would suggest to one having ordinary skill in the art as being the frictional power from which the Applicant [sic] claimed frictional torque is determined.” Office Action at pages 4 to 5. Applicants respectfully disagree.

Applicants submit that the Office Action’s single line excerpt, “Vermeiren discloses in col. 1, lines 11-13 that oil viscosity is determined from a measured motor parameter,” is misleading. Office Action at page 4. The excerpt implies that Vermeiren discloses an indirect method for measuring viscosity when in contrast Vermeiren discloses a direct method involving use of a sensor. As stated in the Specification:

[T]he degree of motor oil contamination can be determined directly, for example, as a function of the electrical resistance, the pressure differential between upstream and downstream sides of the oil filter, transparency, or chemical compositions of the motor oil. The disadvantage of these direct methods is the additional cost of measuring, for example, the need for additional and special sensors, etc. Therefore, in addition to direct measuring methods, there are methods in which the degree of degradation of the motor oil is determined from

operating parameters of the engine or the vehicle that are known otherwise.

Specification at page 1, lines 21 to 28 (emphasis added). Applicants submit that Vermeiren discloses the type of prior art “additional and special” sensor referred to in the Specification. Vermeiren states that the device for measuring the effective viscosity of a lubricant includes a **sensor** stated to consist of a cylindrical rotor capable of being driven by the motor and suspended in a vessel containing the lubricant to be measured. See col. 1, lines 14 to 17. Vermeiren state that by passing the oil whose effective viscosity is to be measured in order to monitor its quality through the housing 4 by way of inlet 5 and outlet 6, the oil is made to lubricate the bearing 7, and its viscosity can be determined under the conditions prevailing in a bearing, much as they would prevail in the machine, or the like, whence the oil derives. See col. 2, lines 20 to 26. Accordingly, Vermeiren discloses a sensor device which directly samples oil for viscosity measurement purposes. Vermeiren does not disclose the step of **indirectly** determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step **as a function of frictional torque of the internal combustion engine**, as recited in amended claim 39.

Further, nowhere in Vermeiren is there a disclosure, or even a suggestion, of the step of determining a viscosity of the motor oil **during operation of an internal combustion engine**, as recited in independent claim 39. As indicated above, Vermeiren discloses taking oil from a “machine, or the like, whence the oil derives” (col. 2, lines 20 to 26) and passing it through the sensor for viscosity measurement. However, nowhere in Vermeiren is there mention, description or suggestion of taking oil from an **internal combustion engine** and measuring its viscosity.

The Office Action alleges that Applicant has defined the frictional torque as being the difference between the starter power and the acceleration power. Office Action at page 4. As such, the Office Action alleges that the measured motor parameter is the power required to obtain a given motor speed which would suggest to one having ordinary skill in the art as being the frictional power from which the Applicant claimed frictional torque is determined. Applicants submit that no such general definition of frictional torque has been asserted.

Frictional torque is described in the context of and as a parameter of an internal combustion engine. As such, the frictional torque value is arrived at by performing a stationary torque equilibrium of an internal combustion engine that is not in gear and is idling. See Specification at page 5, lines 8 to 11. Engine torque when idling is stated to be a function of the amount of fuel injected. See Specification at page 6, line 7. The "motor" of Vermeiren is not an internal combustion engine, but rather a cylindrical sensor rotor suspended in a vessel. See col. 1, lines 14 to 16.

Accordingly, the Office Action's conclusion that the measured motor parameter is the power required to obtain a given motor speed is an oversimplification. Firstly, because Vermeiren discloses a sensor including a rotor not an internal combustion engine. Secondly, because even if the power required to obtain a given rotor speed in a sensor is purportedly indicative of an oil's viscosity, this does not disclose, or even suggest, determining the viscosity of an oil in a more complex internal combustion engine indirectly by looking to the frictional torque of the engine, as described above. Thus, it is respectfully submitted that Vermeiren does not explicitly or inherently disclose, or even suggest, the step of "indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of frictional torque," as recited in amended claim 39.

The Office Action further states that "[a]lthough Vermeiren fails to explicitly teach that the change in viscosity is a function of engine temperature, the Examiner contends that such a teaching is inherent because as [sic] it is very well known to one having ordinary skill in the art, as surely the Applicant [sic] can appreciate, oil viscosity is very dependent upon engine temperature." Office Action at page 4. Applicants again respectfully traverse this contention to the extent that it is maintained and reassert the request that the Examiner provide specific evidence to establish those assertions and/or contentions under 37 C.F.R. § 1.104(d)(2) or otherwise. In particular, it is respectfully requested that the Examiner provide an affidavit and/or that the Examiner provide published information concerning these assertions. This is because this rejection is apparently being based on assertions that draw on facts within the personal knowledge of the Examiner, since no support was provided for these otherwise conclusory and unsupported assertions. (See also M.P.E.P. § 2144.03).

Moreover, judicial or official notice that is based on subjective and unsupported reasoning will not sustain an obviousness rejection. In the M.P.E.P.

cited case of *In re Ahlert*, 165 U.S.P.Q. 418, 420-21 (C.C.P.A. 1970)), the Court made plain that:

Assertions of technical facts in areas of esoteric technology must always be supported by citation to some reference work recognized as standard in the pertinent art and the appellant given, in the Patent Office, the opportunity to challenge the correctness of the assertion or the notoriety or repute of the cited reference. **Allegations concerning specific “knowledge” of the prior art, which might be peculiar to a particular art should also be supported and the appellant similarly given the opportunity to make a challenge.**

In re Ahlert, 165 U.S.P.Q. at 420 to 21 (citations omitted).

Otherwise, if the Examiner cannot provide either references or an affidavit to support these contentions, it is respectfully requested that the rejections of the claims under 35 U.S.C. § 103 be withdrawn for this reason alone.

In rejecting a claim under 35 U.S.C. § 103(a), the Examiner bears the initial burden of presenting a prima facie case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1555, 1556 (Fed. Cir. 1993). To establish prima facie obviousness, three criteria must be satisfied. First, there must be some suggestion or motivation to modify or combine reference teachings. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596 (Fed. Cir. 1988). This teaching or suggestion to make the claimed combination must be found in the prior art and not based on the application disclosure. *In re Vaeck*, 947 F.2d 488, 20 U.S.P.Q.2d 1438 (Fed. Cir. 1991). Second, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Third, the prior art reference(s) must teach or suggest all of the claim limitations. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974). As indicated above, Vermeiren does not disclose, or even suggest the step of “indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of a temperature and frictional torque of the engine”, as recited in amended claim 39. Moreover, the obviousness rejection appears to be improperly based on Applicants’ own disclosure rather than the disclosure of Vermeiren.

In addition, obviousness must be determined with reference to that which would have been obvious to one of ordinary skill in the art at the time the invention was made, and not to the inventor. *Environmental Designs, Ltd. v. Union*

Oil Co., 713 F.2d 693, 218 U.S.P.Q. 865 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984). The Office Action does not even allege that it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Vermeiren as proposed. In view of the foregoing, it is respectfully submitted that Vermeiren does not render obvious claim 39.

Moreover, it is respectfully submitted that the cases of *In re Fine*, *supra*, and *In re Jones*, 21 U.S.P.Q.2d 1941 (Fed. Cir. 1992), make plain that the Office Action's generalized assertions that it would have been obvious to modify Vermeiren do not properly support the § 103 rejection. It is respectfully submitted that those cases make plain that the Office Action reflects a subjective "obvious to try" standard, and therefore does not reflect the proper evidence to support an obviousness rejection based on the references relied upon. In particular, the Court in the case of *In re Fine* stated that:

The PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. This it has not done. . . .

Instead, the Examiner relies on hindsight in reaching his obviousness determination. . . . One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.

In re Fine, 5 U.S.P.Q.2d at 1598 to 1600 (citations omitted; italics in original; emphasis added). Likewise, the Court in the case of *In re Jones* stated that:

Before the PTO may combine the disclosures of two or more prior art references in order to establish *prima facie* obviousness, there must be some suggestion for doing so, found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. . . .

Conspicuously missing from this record is any evidence, other than the PTO's speculation (if it be called evidence) that one of ordinary skill . . . would have been motivated to mak the modifications . . . necessary to arrive at the claimed [inv ntion].

In re Jones, 21 U.S.P.Q.2d at 1943, 1944 (citations omitted; italics in original).

That is exactly the case here since it is believed and respectfully submitted that the present Office Action offers no evidence whatsoever, but only conclusory hindsight, reconstruction and speculation, which these cases have indicated does not constitute evidence that will support a proper obviousness finding. Unsupported assertions are not evidence as to why a person having ordinary skill in the art would be motivated to modify or combine references to provide the claimed subject matter of the claims to address the problems met thereby. Accordingly, the Office must provide proper evidence of a motivation for modifying or combining the reference to provide the claimed subject matter.

More recently, the Federal Circuit in the case of *In re Kotzab* has made plain that even if a claim concerns a “technologically simple concept” -- which is not the case here -- there still must be some finding as to the “specific understanding or principle within the knowledge of a skilled artisan” that would motivate a person having no knowledge of the claimed subject matter to “make the combination in the manner claimed,” stating that:

In this case, the Examiner and the Board fell into the hindsight trap. The idea of a single sensor controlling multiple valves, as opposed to multiple sensors controlling multiple valves, is a technologically simple concept. With this simple concept in mind, the Patent and Trademark Office found prior art statements that in the abstract appeared to suggest the claimed limitation. But, there was no finding as to the specific understanding or principle within the knowledge of a skilled artisan that would have motivated one with no knowledge of Kotzab's invention to make the combination in the manner claimed. In light of our holding of the absence of a motivation to combine the teachings in Evans, we conclude that the Board did not make out a proper prima facie case of obviousness in rejecting [the] claims . . . under 35 U.S.C. Section 103(a) over Evans.

In re Kotzab, 55 U.S.P.Q.2d 1313, 1318 (Fed. Cir. 2000) (emphasis added). Again, it is believed that there have been no such findings.

Accordingly, there is no evidence that the references relied upon, whether taken alone, combined or modified, would provide the features and benefits of claim 39 as amended herein. It is therefore respectfully submitted that amended claim 39 is allowable for these reasons.

As for claims 33, 36 and 40, which ultimately depend from claim 39 and therefore include all of the limitations of claim 39, it is respectfully submitted that

Vermeiren does not render obvious these dependent claims for at least the same reasons given above in support of the patentability of claim 39. *In re Fine, supra* (any dependent claim depending from a non-obvious independent claim is non-obvious).

V. Rejection of Claims 33, 36 and 45 to 47 Under 35 U.S.C. § 103(a)

Claims 33, 36 and 45 to 47 were rejected under 35 U.S.C. § 103(a) as unpatentable over Vermeiren. Applicants respectfully submit that Vermeiren does not render obvious the present claims as amended herein for the following reasons.

Claim 45, as amended, relates to a method of indirectly determining viscosity of motor oil of an internal combustion engine. Claim 45 recites that the method includes the steps of determining an engine frictional torque and indirectly determining the viscosity of the motor oil in accordance with the engine frictional torque.

The Office Action contends that “[c]laim 45 parallels that of claim 39 but does not require the particulars of the engine temperature as in claim 39 nor the determining of the change in oil viscosity.” Office Action at page 5. Applicants respectfully disagree. As indicated above, claim 39 recites that the method includes the steps of determining a viscosity of the motor oil during operation of an internal combustion engine and indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of a temperature and frictional torque of the engine. Claim 45 recites that the method includes the steps of determining an engine frictional torque and indirectly determining the viscosity of the motor oil in accordance with the engine frictional torque.

Applicants submit that claim 45 is allowable for at least the same reasons provided above in support of the patentability of claim 39. Namely, it is respectfully submitted that claim 45 is not rendered unpatentable by Vermeiren for at least the reasons that Vermeiren does not disclose, or even suggest, the step of determining an engine frictional torque and indirectly determining the viscosity of the motor oil in accordance with the engine frictional torque, as recited in claim 45. In view of all of the foregoing, it is respectfully submitted that Vermeiren does not render obvious claim 45.

As for claims 33, 36, 46 and 47, which ultimately depend from claim 45 and therefore include all of the limitations of claim 45, it is respectfully submitted that Vermeiren does not render obvious these dependent claims for at least the same reasons given above in support of the patentability of claim 45. *In re Fine, supra.*

VI. Allowed Claims 41 to 44 and 48 to 52

Applicants note with appreciation the allowance of claims 41 to 44 and 48 to 52.

VII. New Claims 53 and 54

New claims 53 and 54 have been added herein. It is respectfully submitted that new claims 53 and 54 do not add any new matter and are fully supported by the present application, including the Specification. It is respectfully submitted that claims 53 and 54 are allowable.

VIII. Conclusion

Attached hereto is a marked-up version of the changes made to the claims by the current Amendment. The attached page is captioned "**VERSION WITH MARKINGS TO SHOW CHANGES MADE.**"

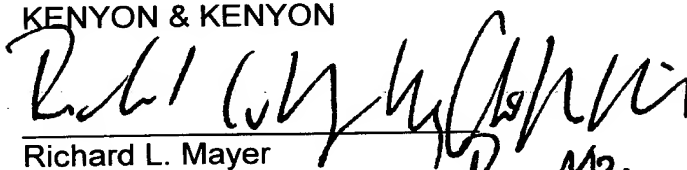
It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

New claims 53 and 54 have been added.

Claims 39 and 45 have been amended, without prejudice, as follows:

39. (Twice Amended) A method of indirectly determining motor oil quality, comprising the steps of:

determining a viscosity of the motor oil during operation of an internal combustion engine; and

indirectly determining and evaluating a change of the viscosity of the motor oil determined in the viscosity determining step as a function of a temperature and frictional torque of the internal combustion engine.

45. (Amended) A method of indirectly determining viscosity of motor oil of an internal combustion engine, comprising the steps of:

determining an engine frictional torque; and

indirectly determining the viscosity of the motor oil in accordance with the engine frictional torque.